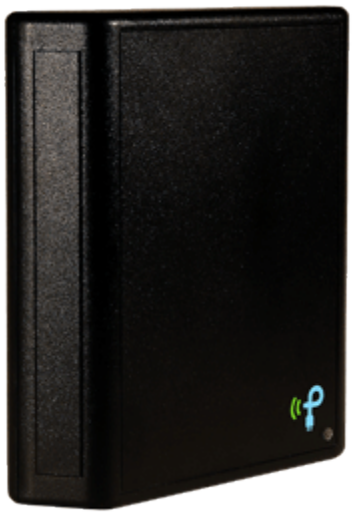
User's Manual

TX91501 – 915 MHz Powercaster™ Transmitter

PRODUCT DESCRIPTION

The Powercast TX91501 Powercaster transmitter is specially designed to provide both power and data to end devices containing the Powercast P2110 or P1110 Powerharvester® receivers. The TX91501 is housed in a durable plastic case with several mounting options. Operational power is provided to either of the two DC power connectors at 5V DC. The TX91501 includes a status LED to provide feedback on functional state. The TX91501 has a factory set, fixed power output and no user-adjustable settings. The label indicates the effective power for which the device is configured, with 3 watts EIRP being the maximum. Once properly mounted, transmission is initiated by applying power to the TX91501.



FEATURES

- FCC and IC approved
- Flexible wall mounting options
- Fully integrated system
- Transmits power and data
- Factory configurable for custom applications
- Wide temperature range
- RoHS compliant

POWERING APPLICATIONS

- Wireless battery charging
- Battery-free wireless sensors
  - Industrial Monitoring
  - Smart Grid
  - Structural Health Monitoring
  - Defense
  - Building automation
  - Agriculture
  - Oil & Gas
  - Location-aware services
- Wireless trigger
- Low power electronics

ORDERING OPTIONS

Model	Firmware	
TX91501	– XX	– XX

- XX (Firmware): Data ID: Transmitter ID
- XX (Model): Output Power
  - 3W: 3 Watts
  - 1W: 1 Watt

PRODUCT CONTENTS

The following items are included inside the package:

Qty	Description
1	915 MHz transmitter
1	Power supply
1	US plug for Power supply (must be snapped in to the Power supply)
1	Quick Start instruction card

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SET-UP AND OPERATION

1. Wall-mount the TX91501 in the desired location with the Powercast logo and status LED facing the direction in which the energy is desired. For permanent installations, mount the TX91501 eight feet or more above floor level.
2. Plug the DC connector of the power supply into one of the two available connectors on the TX91501. Plug the power supply into a 120V outlet.
3. When the green LED illuminates, the TX91501 is active and transmitting radio frequency (RF) energy. Data is automatically included in the transmission and can be received by one of Powercast's Powerharvester Modules.

The status LED indicates the following operating conditions:

LED	Status	Description
Off	Off	5VDC is not applied
Green	Active	Transmitting normally
Red[1]	Fault	Transmission stopped due to an obstruction in close proximity[2]

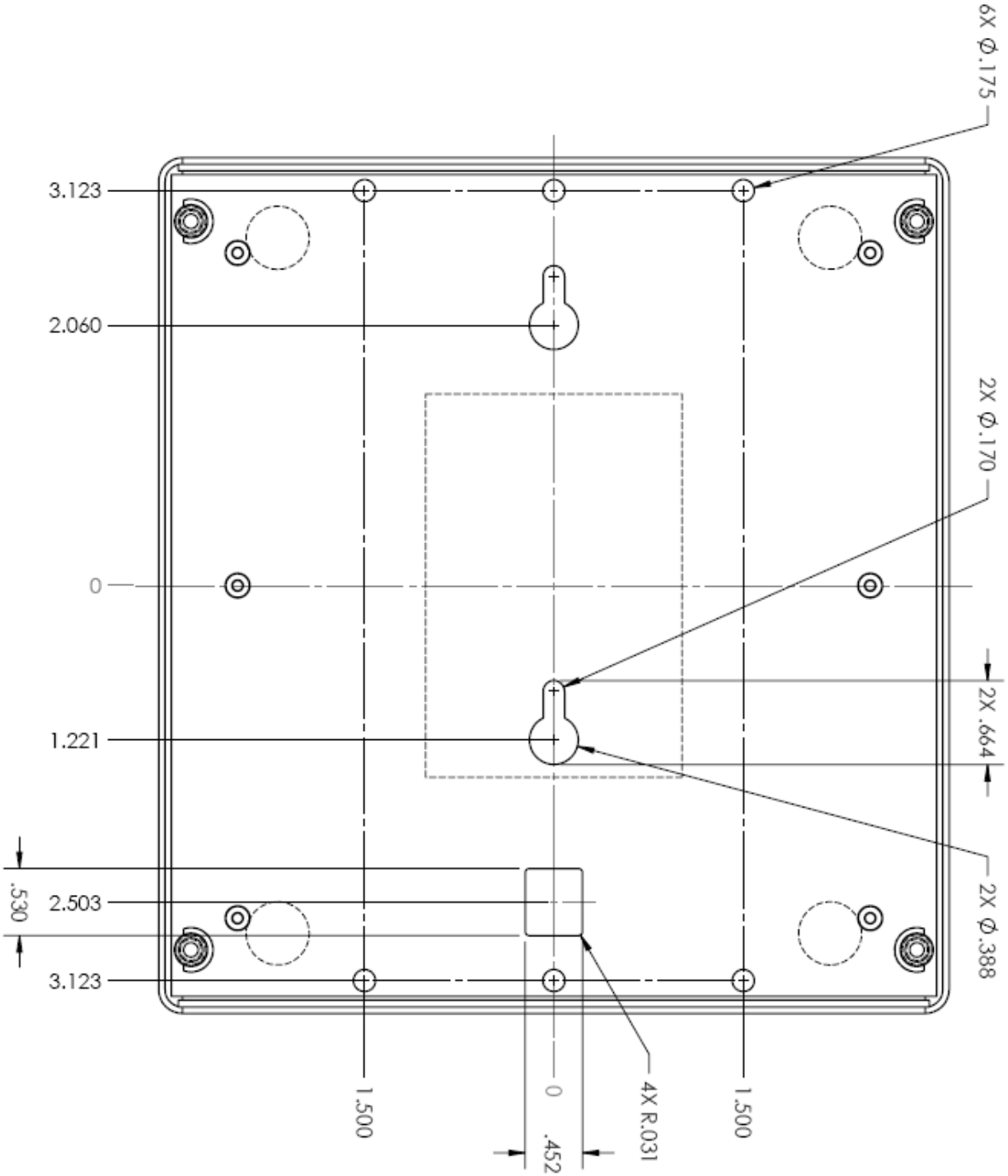
[1] During fault status, the LED will momentarily blink about once per second until the obstruction is removed.

[2] If operating on a flat surface for testing purposes, such as a table, it is recommended that the TX91501 is elevated off the surface with a non-conducting material, such as foam or a cardboard box, OR the TX91501 is positioned near the edge for unobstructed transmission.

SPECIFICATIONS

Item	Description
Modulation	Power: Direct Sequence Spread Spectrum (DSSS) Data: Amplitude Shift Keying (ASK)
Frequency	915 MHz Center Frequency
Power output (not user adjustable)	TX91501-3W-XX: 3 watts EIRP TX91501-1W-XX: 1 watt EIRP
Beam pattern	60° width, 60° height Vertical Polarization (with logo in upright position)
Approvals	FCC Part 15.247 Industry Canada
Firmware Version	Located on the TX91501 label
Data Communications	An 8-bit, factory-set, TX91501 identification (ID) number is broadcast with random intervals up to 10ms using Amplitude Shift Keying (ASK) modulation. The ID number can be found on the TX91501 label.
Operating Temperature	-20°C to 50°C
Installation Environment	Indoor use only
Mounting	6 bracket mounting holes (See mechanical drawing for dimensions) 2 keyholes (See mechanical drawing for dimensions)
Power	5VDC/1A through included Power Supply
Color	Black
Dimensions	6.75" x 6.25" x 1.63" (171.45 x 158.75 x 41.4 mm)
Weight	1 lb
Warranty	1 year

MECHANICAL (REAR VIEW)



*Dimensions in inches

ACCESSORIES

The power supply included with the TX91501 supports interchangeable wall plugs. The power supply ships with the US AC input clip.

Power supply:	PSAC05R-050(P)			
AC Input Clips:	US	RPA	India	RPI
	Brazil	RPB	UK	RPK
	China	RPC	Argentina	RPN
	Europe	RPE	Australia	RPS
	Korea	RPH		

Datasheet: http://www.phihong.com/assets/pdf/PSAC05R.pdf

Mounting Brackets: http://www.polycase.com/category/nema-mounting-flange-kit.html
or equivalent

SUPPORT

Technical support for Powercast products can be initiated through the following methods:

Website contact form: http://www.powercastco.com/contact/

Telephone: +1 412-455-5800

COMPLIANCE STATEMENTS

This device is intended for commercial and industrial applications.

Changes or modifications not expressly approved by Powercast could void the user's authority to operate the equipment. Use and maintain device only as specified in this manual.

All end devices marketed for use with this transmitter must properly receive and extract data from this device.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING!

FCC and IC Radiation Exposure Statement:

This equipment complies with FCC's and IC's RF radiation exposure limits set forth for an uncontrolled environment under the following conditions:

1. This equipment should be installed and operated such that a minimum separation distance of 23cm is maintained between the radiator (antenna) & user's/nearby person's body at all times.
2. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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